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Applicant : NIPPON PRECISION SAAKITSUTSU K.K.

Title : A/D CONVERTING APPARATUS

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2. CLAIMS

An A/D converting apparatus comprising:

adding means for inputting an analog input signal and
a white noise signal, adding a white noise signal having a
predetermined band, which is higher than that of said analog
input signal, to said analog input signal;

sample hold means for over-sampling the output of said
adding means;

A/D converting means for converting the output of said
sample hold means into the digital data; and

low band pass filter means for deleting said white noise
signal component from the digital data from said A/D converting
means.

20 The above sample-held signal is converted into the
digital data by an A/D converting circuit DT₁. In this data,
as shown by a diagonal line in FIG. 2g, a white noise resulting
from a nonlinear property of the A/D converting circuit DT₁
is added. This data is latched by a latch circuit L, then,
25 as shown in FIG. 2h, the data of the white noise signal component,

of which frequency is not less than $f_{d_{\max}}$, is deleted by a lowbandpass filter LF_2 . This signal is skipped by a decimation circuit DS, so that the digital data having a frequency spectrum at a sampling rate by the frequency f_s as shown in FIG. 2i is
5 obtained.

FIG. 1 is a block diagram for illustrating an embodiment according to the present invention.

10 FIG. 1

ANALOG INPUT SIGNAL

LF_1 : BAND PASS FILTER

SH: SAMPLE-HOLD CIRCUIT

DT_1 : A/D CONVERTING CIRCUIT

15 L: LATCH CIRCUIT

HF: HIGH BAND PASS FILTER

NG: WHITE NOISE GENERATING CIRCUIT

LF_1 : LOW BAND PASS FILTER

DS: DECIMATION CIRCUIT